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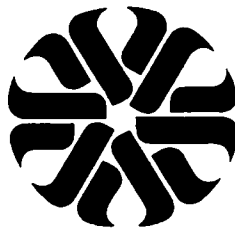
ABSTRACT

This paper describes the processes involved in selecting peer institutions for appropriate benchmarking using national databases (NCES-IPEDS). Benchmarking involves the identification of peer institutions and/or best practices in specific operational areas for the purpose of developing standards. The benchmarking process was borne in the early 1980's with Xerox Corporation's attempt to recapture its market share, and has been adopted by many institutions of higher education in order to discover ways to improve services and processes. This paper provides examples of the use of peer institutions for research on topics such as library staffing and faculty workload. The methodology described includes site visits, surveys, and Internet research. The paper also demonstrates the use of benchmarking at the program level to determine the feasibility of initiating new occupational programs and to guide decisions about program modification or expansion. Included are the following topics: usefulness of benchmarking, review of the literature, projects sponsored by national organizations, consortium studies, individual benchmarking projects, benchmarking in the community college sector, description of Pima Community College and its use of benchmarking, consortium of multi-campus community colleges; feasibility studies for new programs, and conclusions related to the benchmarking experience at Pima Community College. Appended is a survey form for postsecondary institutions. (Contains 24 references) (AS)

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The Craft of Benchmarking: Finding and Utilizing District-Level, Campus-Level, and Program-Level Standards

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**Paper presented at the annual meeting of the Rocky Mountain
Association for Institutional Research, Bozeman,
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The Craft of Benchmarking: Finding and Utilizing District-Level, Campus-Level, and Program-Level Standards

ABSTRACT

As institutions become more concerned with "how are we doing?" and "how do we compare to other institutions?" the use of peer or aspirant institutions for benchmarking purposes has acquired an importance for the researcher. At a multi-campus public community college, the use of peer institutions has been expanded to include not only "sister institutions," that is, comparably sized multi-campus colleges, but also institutions which match the College's individual campuses as well as specific occupational programs in operation at other colleges. This paper describes the processes involved in selecting peer institutions for appropriate benchmarking using national databases (NCES - IPEDS) for matching characteristics. In addition, it provides examples of the use of peer institutions for research on topics such as library staffing and faculty workload. The methodology includes site visits, surveys, and Internet research. The paper also demonstrates the use of benchmarking at the program level to determine the feasibility of initiating new occupational programs and to guide decisions about program modification or expansion.

The Craft of Benchmarking: Finding and Utilizing District-Level, Campus-Level, and Program-Level Standards

Introduction

Benchmarking, borne in the industrial competition of the early 1980s with the Xerox Corporation's attempt to recapture its market share, has been adopted by many institutions of higher education in order to discover ways to improve services and processes. Benchmarking involves the identification of peer institutions and/or best practices in specific operational areas for the purpose of developing standards, which will serve as the basis for continuous improvement. In 1995, Pima Community College (PCC), with the encouragement of a new Chancellor, embarked on an extensive process of benchmarking to uncover opportunities for College improvement and innovation. The benchmarking strategy at PCC has included examinations of the activities of peer institutions and best practices in various academic and administrative program areas. This paper describes the benchmarking experience at PCC, including how the College has used the process to develop standards and initiate institutional change.

Definition of Benchmarking

For a national benchmarking project in the early 1990s, the National Association of College and University Business Officers (NACUBO) adopted the following definition of benchmarking:

Benchmarking is an ongoing, systematic process for measuring and comparing the work processes of one organization to those of another by bringing an external focus to the internal activities, functions, or operations. The purpose of benchmarking is to provide managers with an external standard for evaluating the quality and cost of their organization's internal activities, practices, and processes. Benchmarking helps an institution to identify where its opportunities for improvement may lie, to quantify the magnitude of those opportunities, to identify those

institutions that perform a process particularly well, and to adapt that process to aid an improvement effort.

Simply described, benchmarking attempts to answer the following questions:

- How well are we doing compared to others?
- How good do we want to be?
- Who is doing it the best?
- How do they do it?
- How can we adapt what they do to our institution?
- How can we be better than the best? (Kempner, 1993, p. 22).

As a component of continuous quality improvement, benchmarking has found a natural home in higher education. Typically, it is conducted through the use of traditional research techniques, "such as surveys, interviews, and site visits, which provide external and objective measurement for goal-setting and for improvement tracking over time" (Alstete, 1995, p. 27).

Benchmarking takes multiple forms, including performance benchmarking and process benchmarking. Performance benchmarking helps in the identification of areas on campus that need improvement. Process benchmarking is "learning about the processes that enable [other] institutions or companies to display unusual performance excellence, then adapting those processes to your own institution" (Stralser, 1995, p. 16). Benchmarking also may be internal, competitive, or functional (or generic), depending on whether comparative data are gathered internally only, from direct competitors only, or from any organization which provides a model of best practice (Rosenfeld, 1995).

Usefulness of Benchmarking

The transfer of an industrial perspective to higher education provokes issues relating to the purposes and missions of institutions of higher education and whether a process such as benchmarking has usefulness in the new environment. Most fundamental, why benchmark? NACUBO, in launching its benchmarking project in 1992, stated that "used appropriately, the benchmark data can serve as a springboard for the identification and adoption of best practices across higher education"

(Kempner, 1993, p. 22). Benchmarking serves as a valued quality improvement tool and allows the institution to examine its own processes in a critical manner (Alstete, 1995, p. 44).

In addition to gathering data for process improvement, benchmarking is useful by [sic] college and university leaders for strategic planning and forecasting, because it develops knowledge of the competition, views state of the art practices, examines trends in product/service development, and observes patterns of customer behavior. Benchmarking is a source for new ideas, process comparisons, and goal-setting. It enables the benchmarking practitioner to see the organizational functions from an external point-of-view, and not be limited to the traditional method of developing ideas and objectives internally. (Alstete, 1995, p. 11).

Miller (1997), in a discussion of issues related to applying benchmarking to the area of student affairs, noted both potential problems, such as "institutional or program uniqueness" restricting the acceptance of innovations developed elsewhere and the adoption of peer institutions as the only relevant comparison (can a research university learn from a community college?); and potential positive outcomes, such as the development of discrete measures to track critical processes, assessing programs and determining what improvement is needed, and creating a plan of action.

Benchmarking can be useful in efforts to learn from other institutions and can assist in providing guideposts in a changing environment. It is a means of identifying "best practices" for selected programs or activities as well as developing overall criteria for assessing institution-wide processes.

Review of the Literature

Alstete (1995) divides the literature on benchmarking in higher education into three categories: (1) projects sponsored by national organizations, (2) consortium studies, and (3) individual benchmarking projects. We will consider each of these in turn and then devote attention

to studies which have focused specifically on benchmarking in the community college sector.

Projects Sponsored by National Organizations

Perhaps the most ambitious benchmarking project involving institutions of higher education ever undertaken was a study sponsored by NACUBO's in the early 1990s (Kempner, 1993). This study involved 150 colleges and over 1,600 individuals, covered close to 40 functional areas, and developed approximately 600 benchmarks. Its goal was "to assist colleges and universities in measuring costs and service levels so that they will have the information necessary to begin a discussion of best practices with institutions that appear to achieve lower costs or higher service levels" (Kempner, 1993, p. 24). The project coordinators believed that an examination of best practices positions an institution to redesign those processes and functions that are operating below an acceptable standard. Thus, the results of the study could serve a springboard for positive change in operation.

The use of the collected data varied. Some institutions formed peer groups while others used the data to enhance efforts to improve specific functional areas (e. g., SUNY at Buffalo's purchasing department moved to a speed purchasing process for purchase orders under \$500). An asset of the benchmarking processes was the increased emphasis on processes, outputs, and quality of services, instead of a concentration on inputs and resources.

At about the same time as the NACUBO project, the American Assembly of Collegiate Schools of Business (AACSB) (1994) sponsored a pilot benchmarking study of practices in some of its member colleges. This project, which examined the graduate admission processes of business schools in the Big Ten Conference, established for these processes a basic language and data-reporting standards, which previously had not existed. In addition, it provided the participating colleges with a useful means of measuring internal operational effectiveness, even before they received competition data. As a consequence of their participation, the schools came to see benchmarking as a critical catalyst for change, largely because it "reduces, or eliminates, resistance to improvement

because resisters find it difficult to dispute hard data" (Alstete, 1995, pp. 44-45).

A particular strength of the benchmarking done in the AACSB pilot project, and in subsequent studies of business school operations spawned by the pilot (Alstete, 1995), lies in the fact that it was developed and used by the personnel involved in the actual implementation of the processes studied. The benchmarking has been highly effective, probably much more so than it would have been had it been performed (as it often is) at a more senior level with the results never reaching or having the ownership of the responsible units.

In addition to the NACUBO and AACSB projects, there was a third benchmarking study in the mid-1990s that was sponsored by a national higher education organization. In 1995, the Association for Continuing Higher Education (ACHE) funded a benchmarking project to measure the administrative processes and financial ratios associated with noncredit course and program management (Alstete, 1996). The 300 institutional members of ACHE were surveyed for the project and 57 returned useable completed questionnaires. The performance on each benchmark of the top 12 performing institutions--referred to as the "leaders"--provided a point of reference. Each participating institution had the opportunity to compare itself with the leaders, analyze its effectiveness, and make decisions about whether improved efforts were warranted.

The director of the ACHE project noted that the one part missing from this benchmarking effort was "the ability to identify and visit competitive institutions, as some consortium and most individual benchmarking studies offer participants" (Alstete, 1996, p. 47).

Consortium Studies

Benchmarking also has been the focus of consortium studies "organized by institutions interested in freely sharing information" (Alstete 1995, p. 48). One of the earliest of these was the Study of Independent Education in Indiana in the mid-1970s (Jellema and Oliver, 1975). Underwritten by the Lily Endowment and commissioned by the Independent Colleges and Universities of Indiana, Inc., the project

produced reports on institutional goals, the cost of instruction, student characteristics and finances, financial health, inter-institutional cooperation, and economic impact. The findings provided each of the participating 32 institutions with an historical benchmark for planning and making projections.

A more recent consortium-sponsored project is the National Study of Institutional Costs and Productivity, which began in 1996 (Middaugh, 1995 as cited by Alstete as telephone conversation). The University of Delaware, with funding from the Fund for Improvement of Postsecondary Education, has surveyed 160 institutions, including research, doctoral-granting, and comprehensive colleges and universities, to develop benchmarks related to operational costs and productivity outcomes.

A number of benchmarking consortiums have been set up to operate on a continuing basis. Among these are the Higher Education Data Sharing Consortium, the Public University Data Sharing Consortium (which is no longer active), the Southern University Data Sharing Consortium, the National Cooperative Data Share - Benchmark Data Exchange, and the League for Innovation for Community Colleges. The advantage of such organizations, which can be regional in nature (e. g., the Western Interstate Commission on Higher Education) or sector oriented (such as the League for Innovation for Community Colleges), is that they make uniform and consistent inter-institutional comparisons feasible and cost effective. They result in consistency of definitions and reflect on the comfort that colleges and universities have in sharing information about their operations. (Stralser, 1995, p. 18).

Individual Benchmarking Projects

Recently, individual institutions of higher education have, on their own, initiated benchmarking studies. For example, in the early 1990s, Oregon State University surveyed peer and aspirant institutions to obtain benchmarks for a broad array of administrative and support services (Coate, 1992). The data proved to be valuable reference points for assessing the relative efficiency of the benchmarked processes and supported efforts to improve them.

During the same period, the University of Central Florida

benchmarked operational processes in three areas: employee performance evaluation, mathematics instruction, and undergraduate graduation certification (Dossey-Terrell, 1995). In the area of employee performance evaluation, the benchmarkers used a generic benchmarking approach in that they went outside of higher education to private for-profit businesses and the K-12 educational sector for comparative data. In all areas, they found their benchmarking efforts helpful and concluded that benchmarking prevented them from making some decisions they would have regretted in the future.

Some colleges have institutionalized benchmarking processes, so that they have become standard operating procedures for units across the campus. At Pennsylvania State University, for example, many offices and departments have identified core processes and established benchmark assessment teams (Sandmeyer, 1995). Some of the benchmarking is internal (gathers data for comparing internal units with one another); but much is external and even generic, as the units have sought to identify best practices in both the higher education and non-higher education sectors. The institutional ethos at Pennsylvania State emphasizes that the data be used for improvement and not just to prove how good the institution is.

Other institutions have narrowed their benchmarking efforts to very specific areas. One example is Babson College, which has benchmarked business transaction processes (Shaw, 1995). Like Pennsylvania State, Babson conducted generic benchmarking, searching for best practices outside of higher education. Thus, in benchmarking the registration process, they first broke the process down into sub-components (recruiting, "check-in," customer service, etc.) and then benchmarked for each against specific for-profit corporations known for excellence in the operational area.

Individual benchmarking projects can be even more modest. The University of Chicago's Graduate School of Business used an internal benchmarking process in an effort to improve teaching (Bateman, 1994). Graduate students ranked each faculty member's teaching and described why there were differences. The results were well received and provide evidence for the usefulness of benchmarking in academic (and not just

administrative) areas.

Benchmarking was successfully used at the University of Maryland to reduce processing for surplus property requests (Schnell, 1995). A new, more efficient operation was designed, using continuous feedback from campus customers and benchmarking to 18 other surplus property operations in the United States and Canada.

Among numerous other examples of individual benchmarking projects, both in the United States and abroad, are the following: the benchmarking of administrative costs, professional development expenditures, and faculty workloads at Sir Sanford Fleming College in England (Clarke, 1995), of international student services and job placement and career counseling services at Queensland University of Technology in Australia (Jackson, 1995), and of the delivery of graduate business school programs at the Harvard Business School (HBS, 1993). The latter effort involved visitations by faculty members to nearly two dozen traditional business schools in the United States and abroad, as well as corporate training programs, and other selected institutions to collect information. The "External Comparisons Project Team" concluded that MBA programs were redefining the nature of management education, and produced a report which compared, in detail, the curriculum of traditional MBA programs with the new designs they found.

Perhaps the most thorough-going individual benchmarking project, to date, is the one which has been undertaken by Northwest Missouri State University (Seymour, 1996). This institution has been using external comparisons, benchmarking, and the search for best practices throughout the seven categories used for scoring the Malcom Baldrige National Quality Award: leadership, information and analysis, strategic and operational planning, human resources development and management, educational and business process management, institutional performance results, student focus and student and stakeholder satisfaction. Northwest Missouri State has done more than just use external data comparisons, as many other institutions do when conducting benchmarking. They have searched for best practices and implemented findings across the University in many different departments and areas of management. They have even benchmarked the benchmarking process

itself, as they have sought to improve the ways in which they collect comparative information for the purpose of assessing and improving operational processes.

Benchmarking in the Community College Sector

As should be clear to the reader from the foregoing discussion, benchmarking efforts in higher education, at least as reported in the literature, have occurred primarily in the four-year college sector. Although, for a long time, the American Association of Community Colleges routinely has collected and shared comparative data with its member institutions, true benchmarking is a rarer phenomenon among two-year colleges.

A particularly noteworthy effort was a project in the mid-1990s to benchmark two-year colleges' industrial modernization activities (Rosenfeld, 1995). The purpose of the project was to identify exemplary community college programs for assisting small and medium-sized enterprises to become more competitive in national and international economies. The methodology included, in addition to survey data collection, site visits by experts, since:

Even the best of surveys cannot fully capture the intricacies of the rapidly evolving efforts of community colleges and reliably assess their impacts. This requires an independent external observer to provide the contextual data needed to describe day-to-day operations, including both successes and failures, working relationships and inevitable conflicts. The ten regionally distributed colleges were selected to provide this contextual data, as well as more detailed information. Some of the ten already have nationally recognized programs, while others have quietly developed innovative approaches and perhaps deserve more recognition. At each site, opinions and information were gathered from a wide range of friends, partners, customers, and critics of the colleges in order to paint an objective picture on their impacts on regional manufactures. (Rosenfeld, 1995, pp. 18-19)

Thus, while the survey data provided a broad-brush picture of the leading colleges, the ten case studies, supplemented by personal observations of and literature from colleges across the nation and from Europe, added a rich set of experiences that facilitated a better understanding of the contributions of community colleges to industrial competitiveness.

The research indicated that "exemplary centers have institutional and community support and some form of independent recognition or status that protects them from political or philosophical changes unrelated to the local economy. They employ staff with considerable industrial experience and credibility and actively partner with other colleges, modernization agencies, and economic development institutions" (Rosenfeld, 1995, p. 52). The project directors concluded that community colleges working to strengthen the local economic situation could look to these institutions for "best practices," even if they needed to translate them from one type of manufacturing to another.

Another study involving community colleges benchmarked the integration of occupational and academic education. Through the National Center for Research in Vocational Education (NCRVE), the National Consortium of Product Quality (NCPQ) identified models of successful integration (Grubb and Kraskouskas, 1992). NCPQ and NCRVE also have identified best practices in the development of student-to-work (STW) curriculum, which they have translated into a comprehensive set of standards and indicators for reviewing STW curriculum (Ellibee and Mason, 1997).

By the time PCC initiated its foray into benchmarking in late 1995, the practice was well established in higher education. Thus, a number of models and a variety of data-collection tools were available for its use in the endeavor. In the remainder of this paper, we detail PCC's experience with benchmarking, after first describing the College.

Description of Pima Community College

Pima Community College, the 4th largest multi-campus community college in the United States, serves the residents of southern Arizona,

primarily the City of Tucson. In 1997-98, the unduplicated credit enrollment at College's five campuses was 40,836 students. The minority enrollment, mainly Hispanic (10,854 students, 27% of the total annual enrollment), accounted for 39% of the annual head count enrollment. The Center for Training and Development, located at the Desert Vista Campus, served an additional 706 students in clock-hour programs designed for immediate employment and supported by external funding. The minority enrollment at the Center was 59% of the total enrollment with Hispanic students accounting for 46% of the Center's annual enrollment.

The College, established in 1966, is administered by a district-elected five-member Board of Governors. There are four "brick and mortar" campuses and a campus without walls (the Community Campus), which offers courses throughout the service area, including over cable television and the Internet. The College, as a public community college, is supported by local property taxes, state appropriations, and tuition and fees. Recently, District voters approved the issuance of bonds in support of the College. The funding will be used for physical improvements to the campuses, updating of the technology infra-structure, and the construction of a new campus on the northwest side of the service area. The College is also working on implementing a Student Success Model.

Benchmarking at Pima Community College

With the availability of funds and a desire to make the "best use" of the resources, a potential for increasing enrollment due to anticipated continued population growth, external and internal demands for accountability, and the need to be both efficient and effective in enhancing and supporting student success, in 1995 PCC initiated benchmarking activities, looking to its community college colleagues for information and to discover "best practices."

Two specific events, on the heels of the successful bond election, sparked these activities. The first was the arrival of a new chancellor. Having been employed for some years in the California Community College System, he came to PCC with certain data expectations, including the availability of comparative information on in-state institutions, which was not fully available in Arizona at that time, and on appropriately

selected peer institutions.

The second event was a decision by the College to make major changes in the distribution of instructional programs across the campuses and to initiate new programs on each campus. The goal was to better serve students and to achieve a fairer distribution of full-time student equivalents (FTSE or FTE) among the campuses. The impending curricular changes provided the opportunity to rethink how existing programs were being offered and to decide how new programs could best be implemented.

Our benchmarking experiences of the last two years have included: the creation of a consortium of like institutions for data exchange purposes, surveys of these institutions to benchmark full-time faculty workload and library practices, numerous site visits to benchmark specific instructional and student support programs and institutional structures, and the use of survey and Internet data to benchmark proposed new programs for program feasibility studies.

Consortium of Multi-Campus Community Colleges

PCC's Office of Institutional Research was requested to develop a list of suitable peer institutions which met the organizational requirement of being multi-campus (having three or more campuses) and having a fall enrollment (based on IPEDS reporting) within 10,000 head count of the College (a range from about 17,500 to 37,500 fall credit head count). Twelve institutions from the list were contacted (CEO to CEO) about participating in data exchanges and developing linkages among the institutions, such as a possible common website. Eleven institutions agreed to participate.

The initial exchange involved basic data such as annual FTSE (or FTE) enrollment, the number of full-time and part-time faculty, fall head count enrollment, selected fall student demographics (average age of students, number and per cent of students by ethnicity categories used in IPEDS, gender, full-time/part-time status), and number of campuses and centers. The institutions as large public community colleges tended to serve urban areas. Some were in the midst of changes (e. g., moving to a semester system from a quarter system, experiencing enrollment growth and the

need for more campuses), while others were experiencing stability. Even with the differences between institutions, we all were facing concerns about standards and accountability, and felt the need to learn from one another.

Two Survey Studies of Community Colleges

Shortly after the consortium was established, PCC's Office of Research and Planning contacted the members to request their participation in two surveys. The purpose of one survey was to benchmark library practices and processes, such as those associated with funding and staffing. The other was a survey of faculty workload determination practices. (The latter included two non-consortium members to insure the participation of community colleges from geographical areas not represented by the consortium.)

Library survey. The initial catalyst for this research was the library staff, who wanted to know how "we compared" to others and who wanted fundamental/baseline information on library operations and services. The specific areas of interest in the library survey were: organization, employee status, compensation, employee satisfaction, funding, staffing, automation, and hours of operation. All comparisons were made with other multi-campus operations at the community college level.

A major issue was whether functions and/or positions were district- or campus-based. "Results indicate that 46% of the institutions have an individual coordinating library services for all campus libraries" (Rochin-Wallace and Teso, 1998, p. 1). While at each participating institution librarians were classified as faculty, there was variation in compensation. There was also variation in funding for equipment and furniture and for computing systems. The equipment funding differences related to the allocation process: whether it was centralized or decentralized (campus based), and whether it was solely driven by need. The report was presented to the College's librarians.

Faculty Workload Study. The faculty workload survey developed out of longstanding faculty senate and administrative concerns about

faculty workload determination practices at the College. "The survey instrument elicited information on the calculation of a full-time faculty workload, loading exceptions, compensation issues, and factors that tend to influence faculty loading, for example, educational support, adjunct faculty, and 'skill center' instruction" (Silvers, Attinasi, and McGregor, 1998, p. 3). Twelve institutions provided data. The quality of the data reflected the knowledge of the topic held by those who completed the survey. In addition, there were subtleties in the colleges' workload specifications that may have been lost in converting them to comparable form. Even with these limitations, the results have value in terms of both the College's careful defining of terms and the actual information gathered.

Among the findings of the study: Institutions on a semester calendar typically require 30 load hours of instruction per year, those on a quarter calendar 45 load hours; lecture contact hours usually load at one load hour per contact hour (although at some institutions, English lecture hours load at more than one load hour), and laboratory contact loading is variable both within and across colleges and often related to discipline. In addition, while all of the colleges allowed overloads, the number of load hours varied as did the compensation, but typically it was at the part-time faculty rate. Half of the institutions indicated that "the number of students taught affects the loading of at least some kinds of classes" (Silvers, Attinasi, and McGregor, 1998, p. 7). The source of the faculty workload specification was either a collective bargaining agreement (75% of the institutions) or board policy (25% of the institutions).

In cooperation with the faculty, the College administration will use the information gathered through the workload study as a baseline in developing standards for faculty workload determination.

Site Visits

As mentioned above, one of the impetuses for benchmarking activity at PCC was a decision by the College to redistribute programs among the campuses and to initiate new programs on each campus. This presented College faculty and administrators with the opportunity to rethink how the College was offering the programs to be moved and how it might best

implement the new programs. The College chose to act on this opportunity through benchmarking visits to institutions with reputations for "best practices" in these program areas.

The initial benchmarking teams consisted of representatives of: District-level academic and financial administration, the administrations of the campuses to which the programs were to be moved, and the College's Research and Planning Office (of which the Office of Institutional Research is a subunit). Subsequent benchmarking teams were composed of faculty members in the affected programs as well as District-level academic and campus-level administrators. Among the programs benchmarked were: aviation, culinary arts, hospitality management, early childhood education, business, and health-related programs. In addition, the team members sought to benchmark advising and counseling services.

Site visits also were made for the purpose of benchmarking practices and processes in specialized components of the College: the campus without walls (the Community Campus) and the vocational skills center (the Center for Training and Development). With respect to the campus without walls, the benchmarking team sought information about the mission of this kind of unit at other colleges and on its relationship to sister brick-and-mortar campuses, its funding, its staffing, and its role in contract and distance education. They wanted to know how occupational skill centers at other institutions were funded, how they related to other college units, what the status of their instructors was (faculty or staff, full-time or adjunct), how their instructors were paid, and whether they offered courses for credit. In addition, they wanted to know what specific kinds of courses they were offering and how they were delivering them (particularly, with respect to the use of technology).

As a consequence of the benchmarking trips, valuable data were gathered on how currently offered programs might be restructured and new programs implemented. In addition, the College is considering the implications of the information which it collected on campuses without walls and vocational skill centers, for the potential restructuring of these units at the College.

Feasibility Studies for New Programs

PCC has initiated a process for determining program feasibility which includes benchmarking. The Curriculum Office, upon receiving a proposal for a new or modified occupational program, provides the Office of Research and Planning with a list of colleges which offer the program. The listing is based on catalog information and IPEDS data. Using a standardized questionnaire form (Appendix A), staff members conduct a telephone survey of colleges having the program to find out about costs, enrollment, completers, and job placement. These data become part of the feasibility study, providing a view of how successful a program is at another location.

Program feasibility studies also include data on local employment opportunities (labor statistics) and a community employment scan involving potential employers. This data gathering is done prior to developing a curriculum and provides insight into a program's potential for enrollment and employment opportunities for completers. Computer programming specialist (a certificate program), auto-collision repair (AAS option) and public safety communication (both AAS and certificate) are three programs that are being introduced at the college after undergoing the feasibility procedures.

Conclusions: The Benchmarking Experience at Pima Community College

The experiences at PCC were as varied as the multiple approaches to benchmarking. The creation of a consortium of like institutions has provided the College with comparative information on important concerns, such as the proportion of courses taught by adjunct faculty, minority enrollment, and enrollment trends. (In the course of our initial exploration of potential consortium members, we discovered evidence of a continuing trend of multi-campus colleges evolving into multi-college districts. Two institutions had just made the change.)

One major impact of the experiences was the clarification of definitions of processes at the College. And it was a particularly good

time for this to occur, inasmuch as the College was in the process of implementing a new college-wide information system.

The College is still in the process of utilizing the data gathered through its various benchmarking activities. As an example, the final report on full-time faculty workload, which has just been completed, is now being shared by the College administration and the faculty senate. PCC learned that other colleges also have a wide range of crediting faculty for their workload.

The structure and the operations of the Center for Training and Development (The Skills Center) are being reviewed in light of the site visits. One idea under exploration is to keep the administration of the Center centralized while expanding the availability of short-term training programs to other campuses. This proposed arrangement using resources at each campus would expand the availability of programs but allow funding agencies to work with a centralized coordinating identity. The College's campus without walls, like the Center for Training and Development, is undergoing a careful review. The growth potential, especially with the technology now available, for this campus is significant. Benchmarking data will help to clarify its future and has already been helpful in redefining its mission statement.

The most evident use of benchmarking at the College has been its role in deciding the future of new programs and the modifications of current ones. Decisions were made not to go forward with vocational programs based on the feasibility studies. Site visits also provided information about vocational programs. Tourism is an important local industry and the College used site visits to gain insights into the "best practices" in offering options in the hospitality program. Site visits at two community colleges with well regarded aviation programs were helpful in making decisions about the College's program offerings in this area and in the design of the new site for the aviation technology program.

Overall, benchmarking has provided the College with an important external focus in dealing with multiple opportunities and challenges. Institutional research has assisted in the benchmarking effort by helping the College to collect, sort, and understand the benchmarking information.

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Appendix A.

Feasibility Study for New Programs Survey Form for Post-secondary Institutions

**Feasibility Study for New Programs
Survey Form for Post-secondary Institutions**

Program _____ Date _____

Institution _____

Contact (name and position) _____

Phone # _____ Fax # _____ E-mail _____

When did the program start? _____

Enrollment:

- 1) Number of student in the program major -- Most recent fall _____
prior fall semester _____
- 2) Number of students enrolled in program classes -- Most recent fall _____
prior fall semester _____
- 3) Average class enrollment size? _____
- 4) Number of majors when the program started? _____
- 5) Enrollment trends - projected enrollment pattern (stable, declining,
growing) _____
- 6) Special populations? (retraining; older students; minorities) - what are the
enrollment patterns of minority students, older students in the program?

Completers: (available on IPEDS--may need to get from IR)

- 7) For the most recent year reported: Number of certificates awarded _____
number of degrees awarded _____
- 8) For the prior year: Number of of certificates awarded _____
number of degrees awarded _____

Employment:

- 9) What is the percent of graduates hired locally in jobs related to the program
over the last five years? _____
- 10) Initial annual salary of those recently hired? _____
- 11) Projected employment opportunities? _____

Facilities:

- 12) Are the classes held on or off campus? _____
- 13) Are they shared with other programs (which programs) _____ ?
- 14) What was the initial cost of developing the facilities? _____
- 15) What's the annual maintenance costs? _____

Budget:

- 16) What was the initial/start-up cost of program? (if not known, ask for another person who may have that information)? _____
- 17) What was the initial capital expenditure (include equipment and facilities renovation)? _____
- 18) What is the current cost per FTE (full-time student equivalent)? _____
- 19) What is the yearly cost of the program? _____
- 20) What types of special funding (e. g., grants, support from local businesses) have been available to the program

General Issues:

- 21) What is the mode of instructional delivery (i.e. what percent is lecture, labs, clinical, TV, self-pace) _____
- 22) Does the program have partnerships with Tech-Prep, School to Work, Welfare to Work, JTPA, PIC, Community Agencies or any other occupational program?

please describe the partnerships _____

- 23) Is the program accredited or does it have licensing exams? _____
- 24) If you were involved in initiating this program, what are the issues you would need to address?
- 25) Do you have any comments or suggestions about the program?



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